

**Notice of Allowability**

Application No.

10/606,443

Examiner

Michael W. Talbot

Applicant(s)

BUTTRICK ET AL.

Art Unit

3722

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 29 May 2007.
2. ☒ The allowed claim(s) is/are 1-4,7-9,11,12,14-16,20-22 and 38-42.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 5/11/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
MONICA CARTER  
SUPERVISORY PATENT EXAMINER

## DETAILED ACTION

### *Allowable Subject Matter*

1. The following is an examiner's statement of reasons for allowance:

Claims 1-4,7-9,11,12,14-16,20-22 and 38-42 are allowed.

Claims 1,12,14 and 38 are the independent claims.

2. Regarding claims 1 and 14, the prior art of record fails to anticipate or make obvious an apparatus for supporting a tool comprising (1) "wherein the biasing device includes a pneumatic actuator and a control valve coupled to the pneumatic actuator, wherein the control valve being configured to adjustably control at least one of a magnitude and a direction of a biasing force applied to the tool support by adjustably controlling a pressure within the pneumatic actuator", solely or in combination, with an apparatus for supporting a tool having a base, a tool support coupled to the base and moveable along a translation axis, a manufacturing tool coupled to the tool support, wherein at least one of the base and the tool support being configured to operatively position the tool relative to a work piece, and a biasing device.

Kim '133 is the closest art of record.

Kim '133 shows in Figures 3,8a,8b,9,10a,10b and 11 an apparatus (J) for supporting a tool (26) comprising a base (4) having at least one elongated, flexible rail (4), a tool support (33,34,35) coupled to the base (via carriage assembly 22) and moveable along a translation axis (vertical direction), the tool support also being configured to be coupled to the tool (via shaft 32 shown in Fig. 11) wherein at least one of the base and the tool support is further configured to operatively position the tool relative to the work piece for performing a manufacturing operation (col. 5, line 55 through col. 6, line 7), and a biasing device (M,3h,R,15,16,17,27) having a first portion (R) coupled to the base (Fig. 3) and a second portion (15,16,17,M) coupled to the tool

support and configured to apply a biasing force to the tool support (via motor M, undefined but must be either a constant torque or a non-constant torque motor) to at least partially counterbalance a force exerted on the tool support along the translation axis (col. 4, lines 49-57 and col. 6, lines 1-7). Kim '133 shows the tool support moveable in a first direction along the translational axis and a second direction along the translation axis opposite to the first direction (moveable back and forth along rails via carriage assemblies (22) and rollers (13,13',13'',31)). Kim '133 shows the biasing device including a pneumatic actuator (27). Kim '133 shows the biasing device being controllably biasable (via motor M) in a biasing direction along the translation axis (biasing direction and translation axis are both along vertical direction). Kim '133 shows the biasing device including a pressurizable cylinder (27) rigidly coupled to the base and the tool support adapted to at least partially counterbalance a force exerted on the tool support (col. 4, lines 49-57 and col. 6, lines 1-7).

Kim '133 lacks an apparatus for supporting a tool comprising (1) "wherein the biasing device includes a pneumatic actuator and a control valve coupled to the pneumatic actuator, wherein the control valve being configured to adjustably control at least one of a magnitude and a direction of a biasing force applied to the tool support by adjustably controlling a pressure within the pneumatic actuator".

Although it is well known to have an apparatus for supporting a tool comprising a biasing device including a pneumatic actuator and a control valve, there is no teaching in the prior art of record that would, reasonably and absent impermissible hindsight, motivate one having ordinary skill in the art to so modify the teachings of Kim '133, noting that in Kim '133, the biasing device does not have a control valve for adjustably controlling a pressure within a pneumatic actuator, therefore the control valve is not coupled to the pneumatic actuator. Thus, for at least the foregoing reasons, the prior art

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of record neither anticipates nor rendered obvious the present invention as set forth in independent claims 1 and 14.

3. Regarding claim 12, the prior art of record fails to anticipate or make obvious an apparatus for supporting a tool comprising (1) "a plurality of vacuum attachment devices connected to the at least one rail" and (2) "wherein the biasing device includes a pneumatic actuator and a control valve coupled to the pneumatic actuator, wherein the control valve being configured to adjustably control at least one of a magnitude and a direction of a biasing force applied to the tool support by adjustably controlling a pressure within the pneumatic actuator", solely or in combination, with an apparatus for supporting a tool having a base with at least one elongated rail, a carriage assembly having a drive assembly inclusive of a motor being moveably coupled to the at least one rail member, a tool support coupled to the base and moveable along a translation axis and the tool support coupled to a manufacturing tool, and a biasing device.

Kim '133 is the closest art of record.

Kim '133 shows in Figures 3,8a,8b,9,10a,10b and 11 an apparatus (J) for supporting a tool (26) comprising a base (4) having at least one elongated, flexible rail (4), a tool support (33,34,35) coupled to the base (via carriage assembly 22) and moveable along a translation axis (vertical direction), the tool support also being configured to be coupled to the tool (via shaft 32 shown in Fig. 11) wherein at least one of the base and the tool support is further configured to operatively position the tool relative to the work piece for performing a manufacturing operation (col. 5, line 55 through col. 6, line 7), and a biasing device (M,3h,R,15,16,17,27) having a first portion (R) coupled to the base (Fig. 3) and a second portion (15,16,17,M) coupled to the tool support and configured to apply a biasing force to the tool support (via motor M, undefined but must be either a constant torque or a non-constant torque motor) to at

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least partially counterbalance a force exerted on the tool support along the translation axis (col. 4, lines 49-57 and col. 6, lines 1-7). Kim '133 shows the tool support moveable in a first direction along the translational axis and a second direction along the translation axis opposite to the first direction (moveable back and forth along rails via carriage assemblies (22) and rollers (13,13',13'',31)). Kim '133 shows the biasing device including a pneumatic actuator (27). Kim '133 shows the biasing device being controllably biasable (via motor M) in a biasing direction along the translation axis (biasing direction and translation axis are both along vertical direction). Kim '133 shows the biasing device including a pressurizable cylinder (27) rigidly coupled to the base and the tool support adapted to at least partially counterbalance a force exerted on the tool support (col. 4, lines 49-57 and col. 6, lines 1-7).

Kim '133 lacks an apparatus for supporting a tool comprising (1) "a plurality of vacuum attachment devices connected to the at least one rail" and (2) "wherein the biasing device includes a pneumatic actuator and a control valve coupled to the pneumatic actuator, wherein the control valve being configured to adjustably control at least one of a magnitude and a direction of a biasing force applied to the tool support by adjustably controlling a pressure within the pneumatic actuator".

Although it is well known to have an apparatus for supporting a tool comprising (1) a vacuum assembly for attachment of the apparatus to a work piece and (2) a biasing device including a pneumatic actuator and a control valve and a control valve, there is no teaching in the prior art of record that would, reasonably and absent impermissible hindsight, motivate one having ordinary skill in the art to so modify the teachings of Kim '133, noting that in Kim '133, a vacuum assembly is not provided to attached the apparatus to a work piece and the biasing device does not have a control valve for adjustably controlling a pressure within a pneumatic actuator, therefore the control valve

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is not coupled to the pneumatic actuator. Thus, for at least the foregoing reasons, the prior art of record neither anticipates nor rendered obvious the present invention as set forth in independent claim 12.

4. Regarding claim 38 (as previously indicated in the original Office Action dated 06 September 2005), the prior art of record fails to anticipate or make obvious an apparatus for supporting a tool comprising the method steps in specific sequential order as presented by the Applicant, specifically the final three steps of (1) securely engaging the manufacturing tool with the surface of the work piece, (2) with the manufacturing tool securely engaged with the surface of the work piece, detaching the support member from the surface of the work piece, and (3) with the manufacturing tool securely engaged with the surface of the work piece, moving the support member relative to the manufacturing tool.

### ***Conclusion***

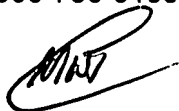
5. Any inquiry concerning the content of this communication from the examiner should be directed to Michael W. Talbot, whose telephone number is 571-272-4481. The examiner's office hours are typically 8:30am until 5:00pm, Monday through Friday. The examiner's supervisor, Mrs. Monica S. Carter, may be reached at 571-272-4475.

In order to reduce pendency and avoid potential delays, group 3720 is encouraging FAXing of responses to Office Actions directly into the Group at FAX number 571-273-8300. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers, which require a fee, by applicants who authorize charges to a USPTO deposit account. Please identify Examiner Michael W. Talbot of Art Unit 3722 at the top of your cover sheet.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



MWT  
Examiner  
4 June 2007

  
MONICA CARTER  
SUPERVISORY PATENT EXAMINER